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California Coastal Commission
c/o Sea-level Rise Work Group
45 Fremont Street, Suite 2000
San Francisco, CA 94105

SUBJECT: CCC DRAFT SEA-LEVEL RISE POLICY GUIDANCE

Honorable Commissioners and Staff:

Thank you for the opportunity to review the Commission's May 2007 draft Sea-Level Rise Policy Guidance document ("the Draft"), and to participate in its development. What you have already accomplished is timely and well-conceived, and we very much appreciate the quality of the report's intent and execution. Our comments below are intended as suggestions we hope will make the next version of this "living document" even more useful.

This letter focusses on aspects of the Draft that rise to a policy level for consideration by Commission staff and the Commission itself.

1. Strategy and Approach

California has established forward-looking legislation to combat the rise of greenhouse gas emissions (GHGs) with AB 32 and SB 375, as well as the recent advent of the cap and trade system. We are not aware of a similar State Legislative statement of goals, priorities, and programs on sea level rise (SLR) adaptation strategies. Similarly, the California Coastal Act was enacted before climate change was widely regarded as a serious threat, and therefore was not written to address the changes our coastline will undergo this century.

This new context gives the Commission a unique opportunity in responding to sea level rise. It has become increasingly clear through our own recent experience in addressing sea level rise that the old command and control approach will not by itself work effectively when the physical environment is changing beneath our feet. Coping with sea level rise will take the sustained, systematic collaboration, coordination, and creativity of government at all levels, together with the private sector. The Commission is well positioned to bring this about. We view the Commission as having a potential leadership role in providing information, support and connections that can maximize the effectiveness of all those working to respond to sea level rise along the coast. For many years, much of the work both our agencies have been engaged in has focused on enacting and enforcing regulations. Sea level rise challenges us to broaden our perspective toward planning and facilitation.

2. Scientific Prediction and Mapping

The Draft establishes the principle of using science to guide decisions, and identifies several modeling programs for mapping sea level rise, including the "Our Coast Our Future" model Marin County is currently using in our local sea level rise planning. It would be helpful for the State to officially endorse these as the models that should be used. Providing the State's official recognition of a standard set of models will avoid inconsistent, piecemeal analysis on a project-by-project basis. Sea level rise maps should be published as official maps by the Commission to avoid unnecessary controversy. It would be helpful to have this issue addressed before the Draft becomes an adopted guidance document. They should also be reevaluated by the Commission periodically to refine the maps based on the latest scientific research and published in a manner that is user friendly.

3. Coordination and Collaboration

Draft Principle #D.15 calls for maximizing agency coordination, planning research and monitoring. It will take persistent and focused leadership by the Commission to make these objectives a reality. While Marin County and other local governments have worked hard to establish collaborations among many federal, state and local agencies, as well as academic and private institutions, the Draft should address how the Commission could more effectively mobilize others, especially state agencies, to work with local governments in adaptation planning. It would be very helpful to local jurisdictions, for example, if both Caltrans and the California Department of Fish and Wildlife (CDFW) could be actively engaged in the local SLR assessment and strategy development process.

Since Highway 1 provides the primary means of access for many small coastal towns, it is very important for local jurisdictions to be able to understand and influence Caltrans' plans for the future. Similarly, collaboration with CDFW, as well as federal wildlife agencies, would be useful in identifying potential impacts to wetlands, streams and other habitats, as well as options for mitigation and migration of these resources. The State Lands Commission may also have a critical role in some of the legal questions noted below, especially with regard to property ownership and the public trust with changes in the mean high tide line.

Based on past experience, it is sometimes difficult for local governments to elicit the attention and sustained involvement of state and federal agencies that will be necessary to address a long term issues such as sea level rise (we understand that staffing constraints may be a factor in this regard). The Commission can be a catalyst and facilitator to foster the comprehensive collaboration this challenge requires.

4. The Need to Address Legal Issues (pp. 20-21)

The Draft refers to private property and "takings" concerns as a matter of "specific cases" (p. 20). The fundamental approach and effectiveness of many SLR responses are affected by legal issues, and the Commission's legal counsel should provide guidance on these.

For example, we have been grappling with the County's legal obligations for public infrastructure that will be too expensive or impossible to maintain in the face of sea

level rise, but that private landowners depend upon. Other cities and counties face similar issues, and an examination of potential liability for takings or damages in such cases is crucial to our ability to prepare for sea level rise.

It would be helpful for the Commission to explain the case law or legal basis that support limiting development in permits issued in the present day based upon presumed "future locations" of access ways (p. 73) or coastal habitats, natural landforms (p.74) or scenic vantage points (p. 76).

Another potential problem relates to smaller projects and "redevelopment restrictions" (p. 51). It is unclear if this policy means that a property owner remodeling a portion of their home or constructing an addition would be subject to all the requirements of the Draft, including the preparation of expensive studies and moving their home inland. The Draft does not address if and how this can be legally justified. While we understand the Draft is essentially a policy guide, it would helpful to local jurisdictions being asked to implement the Draft to have a supporting legal basis regarding a reasonable relationship between remodeling and relocating an existing structure and the effects of sea level rise on coastal resources.

In light of our recent experience with Marin's LCP amendments, we suggest the policies in the Draft be analyzed in light of the legal requirements for nexus and proportionality. We hope that in addition to its own internal resources, the Commission could solicit support from the Attorney General and other agencies to address such important issues.

5. Greater Clarity on Adaptation in Developed Areas

The Draft Guidelines heavily focus on new development of vacant land and substantial additions or remodeling of existing structures. However, they do not adequately address adaptation and protection requirements for existing developed areas. In particular, Coastal Act Section 30235 explicitly permits protection of existing development:

> ***Section 30235 Construction altering natural shoreline***
> *Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply…*

The Draft should address what may become a common situation: a community working to implement adaptation measures to protect all or a substantial portion of its area, but through a phased or long-term deployment period (by way of example, 20 to 30 years) based on sea level rise projections. The Draft should be clarified as to whether all of the policies recommended on a parcel-by-parcel basis can and should be applied as a comprehensive area-wide solution.

The proposed SLR policy guidance contains many restrictions on shoreline protection structures intended to slow the erosion of bluffs or to prevent the inundation of shoreline properties. These policies should be clarified as to whether their intent is to prevent established communities from protecting themselves.

6. Better Explanation of the "Expected Life" Doctrine

The Draft does not fully explain how the proposed concept of limiting new development to an "expected life" determined by projected sea level rise would work. On pages 53, 67 and 68 it directs:

> ***Consider a shorter development life for constrained lots**: When a lot is not large enough to provide a safe building area for the proposed life of the development without reliance upon protection or impacts to coastal resources, a shorter proposed life could allow development to occur for the short time period that the site can safely support such a use* (p. 53).
>
> ***Define Expected Project Life or Design Life**: The expected or proposed project life will help determine the amount of sea-level rise to which the project site could be exposed while the development is in place. Some LCPs include a specified design life for new development. If no time frame is provided, a minimum of 75 to 100 years should be considered as the design life for primary residential or commercial structures ...* (p.67)
>
> ***Determine Sea-Level Rise Range:** ...At a minimum, low and high sea-level rise projections for the proposed life of the project should be used for project analysis and evaluation* (p. 68).
>
> ***Expected outcomes** ...If subsequent steps establish that the proposed site is too constrained for the proposed development to remain safe for the full project life without reliance upon additional protection measures and resources impacts, the expected life of the development may need to be modified to allow a shorter period for use of the proposed site* (p. 68).

It would be helpful to know the specific criteria the Commission has in mind to determine whether a site is "too constrained" by sea level rise. The National Research Council's (NRC) "low and high projections" have a substantial range, especially for the year 2100. The NRC projections do not assign a specific sea level to a specific year. Would the Commission impose restrictions on development based on the low end, the high end, the mean, or some other level of sea level rise projected to occur within each NRC timeframe? For example, what life would be "allowed" for a development that would not be affected until sea level rose 100 cm. and what would the consequence be to such a homeowner at that point?

What does "modifying the expected life of the development to a shorter period" (p. 68) mean in practice? Does it mean requiring that a development be abandoned or removed after a set period of time? Local governments generally do not have the practice or experience of placing a termination date on the approval of a home, business or other permanent structure as a permit condition. The Draft seems to rely on this approach as a management tool without providing guidance as to how it might be implemented. As currently stated under "Expected Outcomes" (p. 68), "reliance on additional protection measures" (such as raising the home) would not appear to be permitted. Would there be some kind of condition that would require the use to be removed after a specified number of years from the original permit date, or when sea level reached a point where the structure would be impacted? Or would the

Commission simply require review and renewal of the permit after a given number of years, as it has recently begun to do with shoreline protection permits?

While we recognize the "expected life" issue is particularly difficult to address from a regulatory standpoint, other options should be considered before the Draft is adopted. It may be worthwhile to consider if and how a conventional prescriptive approach could be improved by adaptive management techniques that recognize both the uncertainty of long range projections and the phasing or sequencing of adaptation responses over time.

7. Arrange for Critical Science Beyond the Means of Most Local Governments

The Draft should recognize that most local governments do not have ongoing access to expertise in global climatology, ocean dynamics, or biological field science. Yet at several places (pp. 30, 39, 120), the Draft calls for local governments, applicants, and staff to modify the NRC projections to account for surge, increased water levels from atmospheric forcing due to an El Niño Southern Oscillation (ENSO) or Pacific Decadal Oscillation (PDO), among other variables. It also calls for sediment supply, salt water intrusion and littoral cell studies. Many local governments or most private consulting firms hired by applicants are not equipped to perform this kind of scientific analysis. Moreover, these "basin-wide phenomena," as referred to in the Draft, apply to larger regions than the local areas. It is Marin County's intent to work with other agencies and academic institutions to develop an efficient, expert and collaborative approach to these issues, but it would be extremely helpful for the Commission to join in this effort and to seek support from the Natural Resources Agency, Ocean Protection Council/Ocean Science Trust, FEMA and other appropriate agencies for such work.

Also, since the NRC projections are fundamental to the Draft, it would be helpful if Table 1 reproduced the NRC table as originally presented showing the individual projections, low, mean, and high.

a. **SLR and Adaptation Monitoring:** The Draft calls upon local governments to evaluate sea level rise projections every five years (p. 63). We hope the Commission takes a strong advocacy position for ongoing mechanisms and funding to support monitoring efficiently and consistently on a statewide basis, coordinating the efforts of local, state and federal agencies, academic institutions and other professional organizations.

   An effective monitoring program requires a reliable baseline. By way of example, the Commission may wish to consider promoting the installation of more tide gauges along the coastline and encouraging the California Department of Fish and Wildlife to coordinate mapping of coastal wetlands using the LiDAR and hyperspectral imagery that has recently become available.

   Similarly, a statewide strategy should be developed to monitor the effectiveness of adaptation measures put in place over time. One approach might be to develop simple, cost-effective protocols that make it feasible for local governments to carry out such monitoring. Alternatively, a single monitoring group could be created to consistently carry out monitoring along the coast, perhaps selectively monitoring a sampling of similar installations.

b. **Coastal Habitat Monitoring:** The Draft states "as part of the LCP, consider establishing a monitoring protocol and requirements for evaluating sea level rise impacts to coastal habitats over time" (p. 58). This appears to suggest such monitoring be solely assigned to local governments. A statewide monitoring strategy engaging the expertise and capabilities of relevant state and federal agencies should be developed to assure consistency and efficiency.

8. Resolve Conflicts with FEMA Requirements

The Draft addresses in several places the potential conflict regarding elevating structures according to FEMA requirements (e.g., p. 53 vs. pp. 62 and 78):

> ...If it is not feasible to site development away from hazards, elevate above the base Flood Elevation (as defined by FEMA) adjusted for projected sea-level rise, and setback as far landward as possible (p. 53).
>
> ...Consider updating zoning requirements to avoid or minimize adaptation measures (such as elevation of structures to address flooding) that might result in adverse impacts to scenic resources or community character (p. 62).
>
> ... designing to meet FEMA requirements may be in conflict other resource constraints, such as protection of visual resources, community character, and public access and recreation (p. 70).
>
> ... an option that is often considered for sea-level rise is to elevate the development or the structures that are providing flood protection. However, elevated structures will change the scenic quality and visual character of the area. Also, elevation of the main development may be of little long-term utility to the property owner if the supporting infrastructure, such as the driveways, roads, utilities or septic systems are not also elevated or otherwise protected... (p. 79)

Reading these statements together, it is difficult to know if the Commission is encouraging local agencies to prohibit elevating structures in response to sea level rise or allowing it as the least preferred option. Providing greater clarity in this area of the Draft would be helpful to avoid putting local governments and applicants between FEMA's "rock" and what may be the "hard place" of the Draft. Leaving local agencies to grapple with ambiguity or vagaries in this area will lead to frustration and inconsistency in how this issue is addressed along the coast.

9. Technical Studies and Cost to Applicants

The Draft contains a number of provisions suggesting a variety of technical studies be required for both LCP updates as well as projects. While larger-scale projects and major LCP updates may be able to afford the cost of providing the breadth of studies listed in the Draft, smaller-scale projects that are typical for Marin would likely not. The combined cost of coastal development application fees and technical studies may be prohibitively excessive for small projects, such as single-family remodels or minor additions to agricultural operations. This issue is of particular concern in Marin due to the already high cost of permit fees and application submittals for coastal development permits that have likely contributed to a rise in unpermitted work. We suggest the Draft provide more refined guidance regarding if and how small-scale projects that do not

pose serious sea level rise impacts may be considered and possibly allowed without the need for expensive technical studies.

10. Combined Flooding

The Draft does not appear to provide guidance on how to apply SLR projections in situations of combined fluvial-tidal flooding. We have identified this issue in our SLR planning in Marin, and it may be an issue elsewhere. In particular, there will likely need to be coordination with FEMA on this issue.

11. Facilitate Transfer of Development Credits (TDCs)

The Draft encourages TDCs, but please clarify if the text is correct:

> ***Establish a transfer of development credits program:*** *Consider creating a transfer of development credits program (TDC) or lot retirement program where new development located in hazardous areas must pay a fee or purchase development rights of properties identified by the land use plan to be in high-hazard sea-level rise zones or key conservation areas for wetland migration (p. 54).*

Does the above statement mean that new development would be allowed in a hazardous area if it paid a fee or purchased TDCs from a property in (another) high-hazard zone or conservation area? Does this apply to both existing and future hazardous areas?

The following provision acknowledges that certain agricultural lands should be encouraged to convert to marsh. We also suggest the Draft address the possibility of also allowing areas zoned for non-prime agriculture or large lots to be used as TDC receiver sites to facilitate moving existing development out of sea level rise areas so those areas in turn could revert to wetlands. We pose this question in the context of Marin's current LCP that supports the use of transfer of development rights (TDR) as a means of protecting agricultural lands (the County's C-APZ zone also allows TDR within coastal agricultural land).

> ***Establish incentives for conservation easements:*** *Encourage conservation easements in areas vulnerable to sea-level rise. Easements could allow conversion of agricultural land to marsh where appropriate (p. 59).*

12. Additional Research Needs

In addition to the other "living shorelines" mentioned, support for the art and science of restoring or creating dunes (engineering requirements, resilience, efficacy, maintenance needs, costs, monitoring protocols, etc.) should be added to the list (p. 91). This support should include critical analysis of the successes and failures of past projects such as beach nourishment, developing effective ways to transfer the technology of current best practices, and making strategic investments in pilot projects that will provide critical information in time to respond to rising seas.

13. General Comment

The text of the Draft tends to be very repetitive. For example, the various analysis "Steps" are repeated several times, and Tables 1, 2, 3, 5 and 6 all basically repeat one another. We understand that the two parts are intended to address planning and permitting separately, but the Draft would benefit from an organizational review to reduce repetition and thus the document length, and therefore make it more likely to be read and used by local agencies.

Thank you for the time and effort you are investing in addressing sea level rise. We commend the Commission staff for taking the initiative and responsibility for addressing such a challenging and important issue. We look forward to continuing our productive partnership with the Commission in caring for our part of California's coast.

Sincerely,

[redacted]

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Director

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Tom Lai, Assistant Director
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